CLAIM AMENDMENTS

Please amend the claims (~~strikethrough~~ or [[double-brackets]] indicating deletion and underline indicating insertion) as follows:

1. (currently amended) A device for positioning orthodontic brackets on a model of a set of teeth, comprising:

a vertical register assembly that is adjustable to move into engagement with and register an actual current axial position of each model tooth;

a rotation register assembly that is adjustable to move into engagement with and register ~~a~~ an actual current rotational position of each model tooth;

a torque register assembly that is adjustable to move into engagement with and register ~~a~~ an actual current torque position of each model tooth; and

a bracket holder assembly that is adapted to hold a bracket in a suspended position at least partially offset from the model teeth in a fixed relationship to the registered axial, rotational, and torque positions of each model tooth, and that is adjustable to orient the bracket in three dimensions relative to each model tooth.

2. (original) The positioning device of Claim 1, wherein the vertical register assembly includes two vertical register arms and a control operably coupled to the vertical register arms that is adapted to horizontally adjust a spaced apart width of the arms.

3. (original) The positioning device of Claim 1, wherein the rotation register assembly includes two rotation register arms and a control operably coupled to the rotation register arms that is adapted to horizontally adjust a spaced apart width of the arms.

4. (currently amended) The positioning device of Claim 1, wherein the torque register assembly includes body, a scale, and a register head that is ~~rotationally~~ pivotally coupled to the body and operably coupled to the scale so that when the register head is moved into engagement with one of the model teeth the register head pivots to make a flush contact with the tooth and the scale displays a torque value.

5. (currently amended) The positioning device of Claim 4, wherein the register head is angularly biased towards a generally vertical plane so that the register head maintains engagement with the tooth as the torque register assembly is adjusted.

6. (original) The positioning device of Claim 4, wherein the register head includes a plate and a perpendicular member that cooperate to form a cross-shaped engagement surface for registration in two dimensions.

7. (currently amended) The positioning device of Claim 1, wherein the vertical register assembly, the rotation register assembly, and the torque register assembly are free-floating, spring-loaded, and biased towards engagement with the model teeth.

8. (original) The positioning device of Claim 1, further comprising a platform adapted for securely mounting the teeth model.

9. (original) The positioning device of Claim 8, further comprising:

a base; and

a superstructure mounted to the base, the superstructure including the platform, the vertical register assembly, the rotation register assembly, the torque register assembly, and the bracket holder assembly.

10. (original) The positioning device of Claim 9, wherein the superstructure further comprises a turntable that is mounted to the base and adapted for rotation in a horizontal plane, wherein the platform is mounted to the turntable and adapted for adjustment in a three dimensions.

11. (currently amended) The positioning device of Claim 1, further comprising a frame having at least two ~~attachments~~ attachment mechanisms that are compatible with the torque register assembly and with the bracket holder assembly so that ~~adapted for interchangeably attaching~~ the torque register assembly and the bracket holder assembly may be interchangeably attached to either of the attachment mechanisms.

12. (original) The positioning device of Claim 1, further comprising a model teeth orienting assembly having an engagement member that levels the model teeth upon engagement therewith.

13. (original) The positioning device of Claim 12, further comprising a frame having at least two attachments adapted for interchangeably attaching the torque register assembly, the bracket holder assembly, and the model teeth orienting assembly.

14 - 27. (canceled)

28. (currently amended) A device for positioning orthodontic brackets on a model of a set of teeth, comprising:

at least one register assembly that is adjustable to move into engagement with and register ~~a~~ an actual current position of each model tooth; and

a bracket holder assembly that is adapted to hold a bracket in a suspended position at least partially offset from the model teeth in a fixed relationship to the registered position of each model tooth and adjustable to orient the bracket in three dimensions relative to each model tooth.

29. (original) The positioning device of Claim 28, wherein the register assembly includes a vertical register assembly that is adjustable to register an axial position of each model tooth, a rotational register assembly that is adjustable to register a rotational position of each model tooth, a torque register assembly that is adjustable to register a torque position of each model tooth, or a combination thereof.

30. (currently amended) The positioning device of Claim 28, wherein the register assembly is free-floating, spring-loaded, and biased towards engagement with the model teeth.

31. (original) The positioning device of Claim 28, wherein the bracket holder assembly includes a bracket receiver mechanism that is adapted to directly or indirectly hold the bracket.

32. (Original) The positioning device of Claim 31, wherein the bracket holder assembly further includes a control that is operable for manipulating the bracket receiver mechanism to engage and release the bracket.

33. (currently amended) The positioning device of Claim 31, wherein the bracket receiver mechanism is adapted to hold a clip, and the clip is adapted to hold ~~that holds~~ the bracket.

34. (original) The positioning device of Claim 33, wherein the bracket receiver mechanism is keyed for alignment with a matingly keyed portion of the clip.

35. (currently amended) A method of positioning orthodontic brackets on a model of a set of teeth, comprising:

determining a torque value for each bracket;

determining an absolute vertical height value for each bracket;

determining a useable horizontal value for each bracket;

registering an axial position of each model tooth;

registering a torque position of each model tooth;

registering a rotational position of each model tooth;

positioning the bracket in a suspended position at least partially offset from the model tooth at the determined torque value with reference to the registered torque position;

positioning the bracket in a suspended position at least partially offset from the model tooth at the determined absolute vertical height value with reference to the registered axial position; and

positioning the bracket in a suspended position at least partially offset from the model tooth at the determined useable horizontal value with reference to the registered rotational position.

36. (original) The method of Claim 35, wherein the step of determining a torque value for each bracket comprises selecting predetermined torque values from a table including average torque values for a population.

37. (original) The method of Claim 35, wherein the step of determining an absolute vertical height value for each bracket comprises selecting a vertical offset value for each tooth, estimating a value representing a horizontal reference plane for a segment of the teeth, and determining the difference between the estimated horizontal reference plane value and the vertical offset value for each tooth.

38. (original) The method of Claim 37, wherein the step of selecting a vertical offset value for each tooth comprises selecting predetermined torque values from a table including average vertical offset values for a population.

39. (original) The method of Claim 37, further comprising the step of conducting a test run to determine whether, based on the absolute vertical height value for each bracket, each bracket in a segment of the brackets is vertically positioned in an acceptable position, and if not then further comprising the step of re-estimating the horizontal reference plane value and repeating the test run.

40. (original) The method of Claim 35, wherein the step of determining a useable horizontal value for each bracket comprises selecting a reference point for a segment of the teeth, measuring the actual horizontal width of each tooth in the segment, determining the difference between the reference point and the actual horizontal width of each tooth, and adopting the difference as the usable horizontal value for the segment.

41. (original) The method of Claim 40, wherein the step of selecting a reference point comprises selecting a center of a facial surface of each tooth at a vertical height, selecting two contact points on a facial surface of each tooth at vertical height, selecting two contact points at inter-proximal heights of convexity of each tooth, or a combination thereof.

42. (original) The method of Claim 35, wherein the step of registering an axial position of each tooth comprises moving a vertical register assembly into engagement with the tooth.

43. (original) The method of Claim 35, wherein the step of registering a torque position of each tooth comprises moving a torque register assembly into engagement with the tooth.

44. (original) The method of Claim 35, wherein the step of registering a rotational position of each tooth comprises moving a rotation register assembly into engagement with the tooth.

45. (original) The method of Claim 35, wherein the steps of positioning the bracket comprise adjusting a vertical control and a horizontal control of a bracket holder assembly.

46. (original) The method of Claim 35, further comprising the step of securing the teeth model in a fixed position on a platform.

47. (original) The method of Claim 45, further comprising the step of leveling the teeth model and the platform.

48. (original) The method of Claim 45, further comprising the step of loading one of the brackets onto a clip and loading the clip onto a bracket holder assembly.

49. (original) The method of Claim 45, further comprising the step of moving the bracket holder assembly to orient the bracket in three dimensions relative to the tooth so that an opening of the bracket be coordinated with adjacent bracket openings to form a arch-shaped wire pathway upon completion of the orthodontic treatment.

50. (original) The method of Claim 48, wherein the steps of positioning the bracket comprise holding the bracket in a suspended position horizontally offset from the model tooth, and further comprising the step of adhering the bracket in the suspended position.

51. (original) The method of Claim 35, further comprising repeating the steps of Claim 35 for each tooth in a segment of the teeth.

52. (original) The method of Claim 50, further comprising repeating the steps of Claim 35 for a plurality of teeth segments, wherein the step of positioning the bracket comprises, for at least one of the tooth segments, positioning the corresponding brackets on lingual surfaces of the corresponding teeth and, for at least one other of the tooth segments, positioning the corresponding brackets on facial surfaces of the corresponding teeth.

53. (original) The method of Claim 51, wherein the step of positioning the brackets comprises positioning at least two bracket openings on a single tooth in an overlapping arrangement.

54. (new) The method of Claim 35, wherein the steps of positioning the bracket comprise holding the bracket in a suspended position horizontally offset from the model teeth, and further comprising the step of encapsulating or embedding the bracket in an adhesive mass in the suspended position offset from the model teeth with the adhesive mass bonded to the model teeth.

55. (new) The method of Claim 54, wherein the bracket has an opening extending therethrough with two open ends, wherein the step of encapsulating or embedding the bracket includes leaving exposed the two open ends of the opening, and further comprising the step of inserting a wire through the opening in the bracket.

56. (new) The positioning device of Claim 2, wherein the two spaced apart vertical register arms are angularly movable together into engagement with a tip or cusp of the tooth so that the vertical register assembly registers both the axial position of the tooth and a vertical position of the tooth.

57. (new) The positioning device of Claim 3, wherein the two spaced apart rotation register arms are angularly movable together into engagement with inter-proximal heights of convexity of the tooth.